

EDUCATION RESEARCH AND DEVELOPMENT CENTER GRANTS

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INSTITUTE OF EDUCATION SCIENCES

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THIS REQUEST FOR APPLICATIONS CONTAINS THE FOLLOWING INFORMATION:

1. Request for Applications
2. Overview of the Institute's Research Programs
3. Purpose and Background
4. Requirements of the Proposed Center
5. Applications Available
6. Mechanism of Support
7. Funding Available
8. Eligible Applicants
9. Special Requirements
10. Letter of Intent
11. Submitting an Application
12. Contents and Page Limits of Application
13. Application Processing
14. Peer Review Process
15. Review Criteria for Scientific Merit
16. Receipt and Review Schedule
17. Award Decisions
18. Inquiries May Be Sent To
19. Program Authority
20. Applicable Regulations
21. References

1. REQUEST FOR APPLICATIONS

The Institute of Education Sciences (Institute) invites applications that will contribute to its Education Research and Development Center program. For this competition, the Institute will consider only applications that meet the requirements outlined below under the section on Requirements of the Proposed Center.

2. OVERVIEW OF THE INSTITUTE'S RESEARCH PROGRAMS

The Institute supports research that contributes to improved academic achievement for all students, and particularly for those whose education prospects are hindered by conditions associated with poverty, minority status, disability, family circumstance, and inadequate education services. Although many conditions may affect academic outcomes, the Institute supports research on those that are within the control of the education system, with the aim of identifying, developing and validating effective education programs and practices. The conditions of greatest interest to the Institute are curriculum, instruction, assessment and accountability, the quality of the teaching and administrative workforce, resource allocation, and the systems and policies that affect these conditions and their interrelationships. In this section, the Institute describes the overall framework for its research grant programs. Specific information on the competition(s) described in this announcement begins in [Section 3](#).

The Institute addresses the educational needs of typically developing students through its Education Research programs and the needs of students with disabilities through its Special Education Research programs. Both the Education Research and the Special Education Research programs are organized by academic outcomes (e.g., reading, mathematics), type of education condition (e.g., curriculum and instruction; teacher quality; administration, systems, and policy), grade level, and research goals.

a. *Outcomes.* The Institute's research programs focus on improvement of the following education outcomes: (a) readiness for schooling (pre-reading, pre-writing, early mathematics and science knowledge and skills, and social development); (b) academic outcomes in reading, writing, mathematics, and science; (c) student behavior and social interactions within schools that affect the learning of academic content; (d) skills that support independent living for students with significant disabilities; and (e) educational attainment (high school graduation, enrollment in and completion of post-secondary education).

b. *Conditions.* In general, each of the Institute's research programs focuses on a particular type of condition (e.g., curriculum and instruction) that may affect one or more of the outcomes listed previously (e.g., reading). The Institute's research programs are listed below according to the primary condition that is the focus of the program.

- (i) *Curriculum and instruction.* Several of the Institute's programs focus on the development and evaluation of curricula and instructional approaches. These programs include: (1) Reading and Writing Education Research, (2) Mathematics and Science Education Research, (3) Cognition and Student Learning Education Research, (4) Reading and Writing Special Education Research, (5) Mathematics and Science Special Education Research, (6) Language and Vocabulary Development Special Education Research, (7) Serious Behavior Disorders Special Education Research, (8) Early Intervention and Assessment for Young Children with Disabilities Special Education Research, and (9) Secondary and Post-Secondary Outcomes Special Education Research.
- (ii) *Teacher quality.* A second condition that affects student learning and achievement is the quality of teachers. The Institute funds research on how to improve teacher quality through its programs on (10) Teacher Quality – Read/Write Education Research, (11)

Teacher Quality – Math/Science Education Research, (12) Teacher Quality – Read/Write Special Education Research, and (13) Teacher Quality – Math/Science Special Education Research.

- (iii) Administration, systems, and policy. A third approach to improving student outcomes is to identify systemic changes in the ways in which schools and districts are led, organized, managed, and operated that may be directly or indirectly linked to student outcomes. The Institute takes this approach in its programs on (14) Individualized Education Programs Special Education Research, (15) Education Finance, Leadership, and Management Research, (16) Assessment for Accountability Special Education Research, and (18) Research on High School Reform.

Applicants should be aware that some of the Institute's programs cover multiple conditions. Of the programs listed above, these include (3) Cognition and Student Learning, (14) Individualized Education Programs Special Education Research, and (15) Education Finance, Leadership, and Management. Finally, the Institute's National Center for Education Statistics supports the (17) National Assessment of Educational Progress (NAEP) Secondary Analysis Research Program. The NAEP Secondary Analysis program funds projects that cut across conditions (programs, practices, and policies) and types of students (regular education and special education students).

c. *Grade levels.* The Institute's research programs also specify the ages or grade levels covered in the research program. The specific grades vary across research programs and within each research program, and grades may vary across the research goals. In general, the Institute supports research for (a) pre-kindergarten and kindergarten, (b) elementary school, (c) middle school, (d) high school, (e) post-secondary education, (f) vocational education, and (g) adult education.

d. *Research goals.* The Institute has established five research goals for its research programs (<http://www.ed.gov/about/offices/list/ies/programs.html>). Within each research program one or more of the goals may apply: (a) Goal One – identify existing programs, practices, and policies that may have an impact on student outcomes and the factors that may mediate or moderate the effects of these programs, practices, and policies; (b) Goal Two – develop programs, practices, and policies that are potentially effective for improving outcomes; (c) Goal Three – establish the efficacy of fully developed programs, practices, or policies that either have evidence of potential efficacy or are widely used but have not been rigorously evaluated; (d) Goal Four – provide evidence on the effectiveness of programs, practices, and policies implemented at scale; and (e) Goal Five – develop or validate data and measurement systems and tools.

Applicants should be aware that the Institute does not fund research on every condition and every outcome at every grade level in a given year. For example, at this time, the Institute is *not* funding research on science education interventions (curriculum, instructional approaches, teacher preparation, teacher professional development, or systemic interventions) at the post-secondary, vocational education, or adult education levels. Similarly, at this time, the Institute is not funding research on measurement tools relevant to systemic conditions at the post-secondary or adult levels.

For a list of the Institute's FY 2006 grant competitions, please see Table 1 below. This list includes the Postdoctoral Research Training Fellowships in the Education Sciences, which is not a research grant program. Funding announcements for these competitions may be downloaded from the Institute's website at <http://www.ed.gov/about/offices/list/ies/programs.html>. Release dates for the Requests for Applications vary by competition.

Table 1: FY 2006 Research Grant Competitions:

1	Reading and Writing Education Research
2	Mathematics and Science Education Research
3	Cognition and Student Learning Education Research
4	Reading and Writing Special Education Research
5	Mathematics and Science Special Education Research
6	Language and Vocabulary Development Special Education Research
7	Serious Behavior Disorders Special Education Research
8	Early Intervention and Assessment for Young Children with Disabilities Special Education Research
9	Special Education Research on Secondary and Post-Secondary Outcomes
10	Teacher Quality – Read/Write Education Research
11	Teacher Quality – Math/Science Education Research
12	Special Education Research on Teacher Quality – Read/Write
13	Special Education Research on Teacher Quality – Math/Science
14	Special Education Research on Individualized Education Programs
15	Education Finance, Leadership, and Management Research
16	Special Education Research on Assessment for Accountability
17	National Assessment of Educational Progress Secondary Analysis Research Program
18	High School Reform Education Research
19	Education Research and Development Centers
20	Postdoctoral Research Training Fellowships in the Education Sciences

3. BACKGROUND AND PURPOSE OF THE CENTER PROGRAM

A. Purpose of the Education Research & Development Center (Center) Program

The Education Sciences Reform Act of 2002 requires that the Institute support not less than eight national research and development centers (centers), with each center covering not less than one of 11 topics of research listed in the statute (<http://www.ed.gov/policy/rschstat/leg/PL107-279.pdf>). The Institute intends for the new centers to contribute significantly to the solution of education problems in the United States by engaging in research, development, evaluation and dissemination activities aimed at improving the education system, and ultimately, student achievement. Each of the centers will conduct a focused program of education research in its topic area. In addition, each center will conduct supplemental research within its broad topic area, and will work cooperatively with the Institute to disseminate rigorous evidence and information to educators and policy-makers as well as to provide national leadership in advancing evidence-based practice and policy within its topic area. For information on existing IES Centers, please see <http://www.ed.gov/programs/edresearchcenters/awards.html>.

For the 2006 Center competition, the Institute invites applications for four National Education Research and Development Centers. The: (1) National Research and Development Center on Early Childhood Development and Education; (2) National Research and Development Center on State and Local Education Policy; (3) National Research and Development Center on Postsecondary Education and Training; and (4) Jacob K. Javits National Research and Development Center for Gifted and Talented Education. The Institute will fund no more than one center in each of these topic areas. In all of its activities, the Institute is committed to funding only high quality work. Hence, the Institute will make an award for a particular center only if at least one application for that center is deemed meritorious under peer review and meets the requirements of the RFA. In addition, applicants should note that the Institute will use a *cooperative agreement* mechanism that allows substantial Institute involvement in the activities undertaken with Federal financial support. The Institute intends to work cooperatively with grantees on the supplementary research projects, dissemination activities, and leadership activities as described below. The specific responsibilities of the Federal staff and project staff will be identified and agreed upon prior to the award.

B. Background for the Education Research & Development Center Program

The mission of the Institute includes sponsoring research that contributes to improved academic achievement for all students, and particularly for those whose education prospects are hindered by inadequate education services, and conditions associated with poverty, race/ethnicity, limited English proficiency, disability, and family circumstance. The mission of the Institute also includes disseminating information on the results of education research that are accessible and used by policymakers, educators, and the general public when making education decisions. One of the ways in which the Institute fulfills its mission is through its National Education Research and Development Centers.

The Institute's research and development center program is different from the Institute's topical grant programs in the following ways: (1) Topical research grants, such as those in Teacher Quality or Mathematics and Science Education (for information on these and other programs, see <http://www.ed.gov/about/offices/list/ies/programs.html>), are to carry out a single program of research; whereas centers carry out both a single program of research as well as a variety of smaller scale supplemental projects that address unmet research needs within the center's broad topic area. (2) Topical research grants do not involve significant responsibility for disseminating findings to practitioners and for providing national leadership in the research field; in contrast, these tasks are central to centers. (3) Topical research grants typically have shorter durations, involve lower levels of funding, and do not address issues with strategies and approaches that have as much scale and breadth as is the case for centers.

For its 2006 Center competition, the Institute is interested in applications that offer the greatest promise in: (1) contributing to the solution of a specific education problem within the center topics described below; (2) providing relatively rapid research and scholarship on supplemental questions that emerge within the center's topic area and that are not being addressed adequately elsewhere; (3) providing outreach and dissemination of findings of the Center, of the What Works Clearinghouse, and of other rigorous research studies and research syntheses on the center's topic to practitioners, policy makers, and technical assistance providers (e.g.,

comprehensive centers); and (4) providing national leadership within the center's topic by developing position papers, hosting meetings, and engaging in dialogue with researchers and practitioners in order to identify promising areas of research, development, and dissemination for the field and to advance evidence-based policy and practice

4. REQUIREMENTS OF THE PROPOSED CENTER

A. Center Competition Goals

For the 2006 center competition, applicants must submit an application *either* under Goal One (National Research and Development Center on Early Childhood Development and Education) *or* Goal Two (National Research and Development Center on State and Local Education Policy) *or* Goal Three (National Research and Development Center on Postsecondary Education and Training) *or* Goal Four (Jacob K. Javits National Research and Development Center for Gifted and Talented Education). Applicants should indicate the goal under which they are applying in the title of the proposal (e.g., Goal One: National Research and Development Center on Early Childhood Development and Education) and on the application form.

a. *Applications under Goal One (Early Childhood Development and Education)*. Under Goal One, the Institute invites applications that propose a focused program of research that will contribute to the solution of significant problems in early childhood education at the preschool level (i.e., ages 3-5). Unlike the K-12 school system, early childhood education encompasses a number of different provider networks with a variety of funding streams serving children and families from diverse backgrounds and needs (e.g., Head Start, Title 1, State Pre-Kindergartens, private pre-kindergarten and child care centers). Examples of issues of concern to policymakers for improving early childhood education are listed below. Applicants are free to propose other foci. In any case the program of focused research along with dissemination, supplemental studies, and national activities is expected to represent a comprehensive effort to address one or more issues of pressing concern to policymakers and practitioners. Applicants should not propose research that duplicates the intent of the Preschool Curriculum Evaluation Research program, which is to evaluate the impact on school readiness of different early childhood curricula (for information on the Preschool Curriculum program, please see <http://pcer.rti.org/> and <http://www.pcer-mpr.info/>).

- (i) *Early Childhood Education Systems*. More children than ever are being served in pre-kindergarten programs, and many states have or are studying the costs and benefits of different options for supporting preschool programs in their states for the purpose of ensuring school readiness and closing the achievement gap (Karoly and Bigelow, 2005). Topics of importance to policymakers include: (a) comparison of the impact on school readiness and costs of funding universal preschool programs versus targeting state-supported programs towards children at risk for later school difficulties; (b) evaluation of the impact on school readiness and costs of different types of preschool programs (e.g., full-day vs. half-day, one-year vs. two-year programs); and (c) examination of the benefits, costs, and barriers to coordinating funding streams and services across multiple preschool providers (e.g., Head Start, Title 1, State Pre-Kindergarten). To address these issues, the Institute is interested in supporting studies that examine planned variation or staged introductions of systems level policies.

- (ii) Workforce issues. Substantial proportions of early childhood educators and caregivers do not have post-secondary degrees. According to the Head Start FACES 2000 data, 42 percent of Head Start lead teachers have not completed either an associate's or bachelor's degree (Zill et al., 2003). Further, preschool teachers with post-secondary degrees may not have received training or professional development that prepares them to deliver pre-academic content in appropriate ways. The Institute encourages applications, for example, with a focused program of research on the development and evaluation of pre-service and in-service early childhood teacher training programs or a program of research to evaluate the effects of alternative routes into preschool teaching and certification on student learning. Center proposals in this category must be broader than what would be funded under the Institute's current Teacher Quality Education Research Grants program (<http://www.ed.gov/about/offices/list/ies/programs.html>) in which applicants could propose to evaluate the effectiveness of a single approach to professional development.
 - (iii) Assessment issues. As is the case with the primary grades, preschool assessment issues pose significant challenges to policy makers, program providers and early childhood educators. Topics regarding assessment issues include: (a) the creation and validation of screening instruments that assess child school-readiness skills at entrance to pre-kindergarten and across the transitions into kindergarten and first grade; (b) the design and validation of teacher-administered assessments to inform instructional practice and promote student learning and achievement; and (c) the design and implementation of standards-based assessments in pre-kindergarten programs in ways that promote accountability and minimize unintended negative consequences for children.
 - (iv) Curriculum and instruction issues. Pre-kindergarten program providers need to offer educational experiences that meet the needs of all of the children they serve and prepare them for the transition to kindergarten and elementary school. Topics of importance to program providers include: (a) the integration of effective instructional practices across multiple developmental domains (e.g., language, literacy, mathematics, social skills and behavior); (b) methods and approaches for enhancing oral language and vocabulary development in pre-kindergarten in an effort to eliminate or reduce the achievement gap in reading comprehension scores in the primary grades; (c) classroom programs that best meet the needs of preschoolers who are English learners and adequately prepare them for English instruction in the elementary school years; and (d) the investigation of factors that support successful transitions to kindergarten and elementary school, such as linked standards for learning.
- b. Applications under Goal Two (State and Local Education Policy). Education policy covers a broad spectrum of issues. Under Goal Two, the Institute invites applications that propose a focused program of research that will contribute to answering significant education policy questions of concern to policy makers and that demonstrate an ability to disseminate this information to target audiences. Examples of possible topics are listed below. Applicants are free to propose a focus other than those in the following examples. In any case the program of focused research along with dissemination, supplemental studies, and national activities is

expected to represent a comprehensive effort to address one or more issues of pressing concern to policymakers and practitioners

- (i) *Education finance policies.* As researchers continue to debate the relation between school expenditures and student achievement, policymakers need better information on the implications of different strategies for distributing resources across districts and schools and, where feasible, within schools. The Institute is interested, for example, in Center proposals in which investigators collaborate with state education agencies to compare the effects of implementing contrasting models for distributing state education funds across districts on student achievement and relevant mediators of student achievement (e.g., indices of teacher quality, availability of advanced academic courses in high schools, quality of instruction) or comparing the effects of alternative models for distributing funds across schools within a district.
- (ii) *Local education management policies.* At the local level, decision makers implement a variety of approaches for improving the quality of the learning environment and increasing student achievement. Most of these approaches change multiple components of schools and systems at the same time, for example, when a district implements a new curriculum in its schools, introduces mentors for beginning teachers, and establishes small learning communities simultaneously. As a result, identifying the unique contribution and efficacy of specific policy changes is difficult, if not impossible. The Institute is interested in applications that include a focused program of research designed to "unpack" commonly used reforms to isolate the mechanisms that work and identify the conditions under which policy changes are most likely to succeed – to identify the "active ingredients" in the intervention. For instance, what are the unique characteristics of small learning communities that affect learning outcomes and could these characteristics be introduced into other larger schools without the wholesale reconfiguration of larger schools? As another example, many analysts believe that ninth grade is a critical point for students transitioning into high school and that a good ninth grade experience can increase the probabilities that at-risk students will graduate. A focused program of research might be planned to identify the critical components or combination of components that are efficacious for improving high school completion rates and to calculate the costs of such components.
- (iii) *Accountability and assessment policies.* The Institute notes that there is relatively little information comparing the effects of different assessment and accountability policies on schools. For example, what are the effects of alternative proficiency levels for state assessments on schools or the effects of alternative teacher certification or licensure policies on student outcomes? What are the effects of implementing alternative approaches to integrating state and local accountability interests with accountability requirements of the No Child Left Behind Act? Although much of the discussion about accountability has focused on schools, there has also been increased interest in student accountability. For instance, how do state assessments and high school exit examinations affect student outcomes (e.g., achievement, high school completion and drop-out rates)? The Institute also welcomes proposals to evaluate the impact of student incentive programs, (e.g., Georgia's Hope scholarship program) on student outcomes.

c. *Applications under Goal Three (Postsecondary Education and Training).* Under Goal Three, the Institute invites applications that propose a focused program of research designed to provide solutions to specific challenges in postsecondary education. The Institute notes that access to and completion of postsecondary education are identified in the Education Sciences Reform Act of 2002 as topics of special importance to the federal government. Accordingly, the Institute encourages applications that use states, school districts, and other systems as laboratories for policy innovation and data collection in order to permit more rigorous research on access to and completion of postsecondary education. Examples of appropriate topics are listed below. Applicants are free to propose a focus other than those in the following examples. In any case, the program of focused research along with dissemination, supplemental studies, and national activities is expected to represent a comprehensive effort to address one or more issues of pressing concern to policymakers and practitioners

- (i) *Postsecondary student finance.* Policymakers and higher education administrators seek answers to practical questions regarding the relative impact – both costs and benefits – of alternative approaches to student financial aid on access to and completion of postsecondary education for both traditional and non-traditional students, and especially for at-risk students. Applicants might consider, for example, the impact of loan financing or loan forgiveness on college completion of at-risk students or whether extending grant aid eligibility to high school students would spur development of dual enrollment programs and increase college enrollment of at-risk students. As another example, investigators might propose a focused program of research to compare the impact of student financial aid policies (e.g., alternative methods for calculating student financial aid eligibility) on access to and completion of postsecondary education.
- (ii) *Transitions to and through postsecondary education.* The Institute encourages applications that propose a focused program of research to identify solutions to specific obstacles to access and completion of postsecondary education. For instance, what interventions or combination of interventions would increase successful transition from high school to postsecondary education for at-risk students (e.g., K-16 curriculum alignment, test preparation programs for college entrance examinations, dual enrollment programs, college mentoring programs, small learning communities)? Alternatively, applicants might focus on interventions to overcome barriers to college completion encountered by non-traditional students (e.g., programs for “stop-outs,” alternative course delivery, transfer of credit policies, workforce retraining).

d. *Applications under Goal Four (Jacob K. Javits Center for Gifted and Talented Education).* Under Goal Four, the Institute invites applications that propose a focused program of research that will contribute to the solution of significant challenges in the education of gifted and talented students in elementary and secondary schools nationwide. Examples of appropriate topics are listed below. Applicants are free to propose a focus other than those in the following examples. In any case the program of focused research along with dissemination, supplemental studies, and national activities is expected to represent a comprehensive effort to address one or more issues of pressing concern to policymakers and practitioners.

- (i) *Classification and Assessment of Gifted and Talented Students.* A key challenge is to determine which students are most appropriate for gifted and talented programs. The Institute is interested in Center proposals in which investigators develop and validate assessment instruments or methodologies for the identification and classification of students as gifted and talented. Studies have shown that students from diverse or economically disadvantaged backgrounds are underrepresented in gifted and talented programs (Castellano, 2003; National Research Council, 2002; Coleman, 2003). The development of assessment methods that can provide valid identification of gifted and talented students who have traditionally been underrepresented in gifted and talented programs is encouraged.
- (ii) *Development and Evaluation of Interventions for Gifted and Talented Students.* To date, very few studies have rigorously and systematically evaluated the efficacy of programs, practices, and curricula for gifted and talented students. The Institute encourages applications that include a focused program of research to develop and/or evaluate specific interventions for gifted and talented students including interventions that are intended to serve populations that may have limited access to enriched programs for gifted and talented students (e.g., students in small, isolated rural communities, students from economically disadvantaged backgrounds).
- (iii) *Standards, Assessment, and Accountability for Gifted and Talented Programs.* Relatively little information exists for education administrators who want to assess the costs and benefits of implementing specific types of gifted and talent programs in their schools. The Institute encourages applications that include a focused program of research to develop or modify standards and accountability systems to be suitable for gifted and talented programs. Such systems might include, for example, student assessments that are sensitive at the upper bounds and have sufficient room to capture change in student performance, along with tools and benchmarks for administrators. Alternatively, applicants might consider the choices encountered by administrators who are faced with competing needs of gifted and talented students and other students in their district. That is, do gifted students do better in the long run if they have access to special programs, and what is the impact on other students for whom opportunities to learn with their gifted peers are diminished? Investigators might propose analyses of existing state longitudinal datasets to capitalize on natural variation in the presence or types of gifted and talented programs and practices across districts within a state in order to identify potential effects of gifted and talented programs on *all* students in a district. For example, after categorizing gifted and talented practices across districts with respect to factors such as proportions of children included, grades included, intensity of programs (e.g., pull-out programs, separate classes, within class supplementary activities), and resources invested, investigators might compare relevant student outcomes (e.g., student achievement, college enrollment) across all students.

B. Requirements Applying to All Center Proposals

The Institute intends for the work of the Centers to include a focused program of research that ideally will result in solutions or answers to specific education problems at the end of 5 years. In addition, Center activities include dissemination, leadership, and supplementary research activities that will cover a range of issues under the broad topic of the center (i.e., early

childhood education, state and local education policies, postsecondary education, and the education of gifted and talented students).

The Institute expects the *focused program of research* to comprise about 50 to 75 percent of a Center's activities depending on the cost and effort required to carry out the focused program of research. The Institute encourages applicants to propose a focused program of research that consists of a set of tightly linked studies that build on each other. The Institute does *not* encourage a center model in which multiple investigators each conduct separate studies that are only loosely coordinated around a topic.

Although the Centers have much broader functions than conducting a focused program of research, the research program is the only portion of the activities of a Center that can be well-specified in advance, and thus can provide a fair basis for comparing and evaluating applications for funding. Consequently as indicated in the requirements described in this section and in the suggestions for distribution of pages in section 12.E, entitled [Center program narrative](#), the majority of the application should be a detailed description of the focused program of research. For the dissemination, quick response supplemental studies, and leadership activities, the Institute asks applicants to demonstrate that they have the capacity through personnel, institutional resources, and previous experiences to carry out the necessary work and to provide examples of the type of work they are prepared to carry out under these categories of activity.

Applicants who are submitting a proposal that is a revision of an application previously reviewed by the Institute should indicate on the application form that their FY 2006 proposal is a revised proposal. Their prior reviews will be sent to this year's reviewers along with their proposal. Applicants should indicate the revisions that were made to the proposal on the basis of the prior reviews using no more than 3 pages of Appendix A.

a. *Justification of the center focus.* Applicants must first specify the goal to which they are applying and the specific focus of the center. Under Goal Three, for example, applicants might propose that the National Education Research and Development Center on Postsecondary Education and Training focus on remedial education and the needs of returning and non-traditional students.

Second, applicants must provide a compelling rationale for having the center focus on the selected education problem. Applicants should articulate the *practical* importance of the work to be conducted by the center. The critical issues are (a) the relative significance of the issue or issues to be addressed in the context of competing problems for which education practitioners and decision makers need education researchers to provide solutions and (b) the likelihood that the work to be undertaken by the center will have an impact at a national level on the issue or issues to be addressed.

b. *Methodological requirements for the focused program of research.* The most important consideration in the competitive review of proposals will be the applicant's articulation of the focused program of research and development. Applications must include well-specified objectives, a detailed research methods and data analysis plan, a timetable for accomplishing the research, and the specific outcomes of the program of research. The Institute is most interested in

projects that will provide rigorous evidence of the effectiveness of strategies intended to solve specific education problems, and particularly the *relative effectiveness and costs of contrasting approaches to problem solution*.

- (i) Sample. When the proposed focused program of research includes collection of new data, the applicant should define, as completely as possible, the sample to be selected and sampling procedures to be employed for the proposed study. Additionally, the applicant should describe strategies to insure that participants will remain in the study over the course of the study.

When the proposed research involves analyses of existing data sets, the applicant should describe clearly the database(s) to be used in the investigation including information on sample characteristics, appropriateness of the dataset for answering the posed questions, and ability to ensure access to the database if the applicant does not already have access to it. The database should be described in sufficient detail so that reviewers will be able to judge whether or not the proposed analyses may be conducted with the database. If multiple databases will be linked to conduct analyses, applicants should provide sufficient detail for reviewers to be able to judge the feasibility of the plan.

- (ii) Design. All applicants must provide a detailed research design. Research questions or hypotheses must be clearly specified. In the description of the design of the studies (e.g., experimental, quasi-experimental, correlational, descriptive), independent and dependent, or predictor and criterion, or descriptive and explanatory variables should be distinguished. Descriptions of the design and data analysis strategies must provide sufficient detail for reviewers to determine if the research questions are appropriately addressed. In addition, if the research is intended to test hypotheses, the design should make it possible, in principle, to obtain results that disconfirm the hypotheses. Any approach must incorporate a valid process that allows for generalizations beyond the study participants.

When the proposed focused program of research has the goal of evaluating the impact of an intervention, studies using randomized assignment to treatment and comparison conditions are strongly preferred. When a randomized trial is used, the applicant should clearly state the unit of randomization (e.g., students, classroom, teacher, or school). Choice of randomizing unit or units should be grounded in a theoretical framework. Applicants should explain the procedures for assignment of groups (e.g., schools, classrooms) or participants to treatment and comparison conditions.

When the proposed focused program of research has the goal of evaluating the impact of an intervention, alternatives to randomized trials that substantially minimize selection bias or allow it to be modeled may be employed *only in circumstances in which a randomized trial is not possible*. Applicants proposing to use a design other than a randomized design must make a compelling case that randomization is not possible. Acceptable alternatives include appropriately structured regression-discontinuity designs or other well-designed quasi-experimental designs that come close to true experiments in minimizing the effects of selection bias on estimates of effect size. A well-designed

quasi-experiment is one that reduces substantially the potential influence of selection bias on membership in the intervention or comparison group. This involves demonstrating equivalence between the intervention and comparison groups at program entry on the variables that are to be measured as program outcomes (e.g., reading achievement test scores), or obtaining such equivalence through statistical procedures such as propensity score balancing. It also involves demonstrating equivalence or removing statistically the effects of other variables on which the groups may differ and that may affect intended outcomes of the program being evaluated (e.g., demographic variables, experience and level of training of teachers, motivation of parents or students). Finally, it involves a design for the initial selection of the intervention and comparison groups that minimizes selection bias or allows it to be modeled. For example, a very weak quasi-experimental design that would *not* be acceptable as evidence of program efficacy would populate the intervention condition with students who volunteered for the program to be evaluated, and would select comparison students who had the opportunity to volunteer but did not. In contrast, an acceptable design would select students in one particular geographical area of a city to be in the intervention; whereas students in another geographical area, known to be demographically similar, would be selected to be in the comparison condition. In the former case, self-selection into the intervention is very likely to reflect motivation and other factors that will affect outcomes of interest and that will be impossible to equate across the two groups. In the latter case, the geographical differences between the participants in the two groups would ideally be unrelated to outcomes of interest, and in any case, could be measured and controlled for statistically.

Understanding the effects of existing programs, practices, approaches, and policies can sometimes be advanced by analyses of multivariate data, such as longitudinal individual student data that exist in a number of state-level and district-level databases. *For questions for which experimental approaches are not practical*, the Institute is interested in well-designed correlational analyses involving large longitudinal databases that include information on growth over time in the skills and knowledge of individual students as connected to their educational experiences. Although even the most sophisticated of such analyses on the most detailed of datasets cannot support strong causal conclusions in terms of what works, appropriately designed analyses of the appropriate data can often test and discard certain models of causal effects as unlikely. If the results of such analyses reduce the need to conduct expensive field trials of interventions that are unlikely to be effective, they would be a worthwhile investment.

- (iii) *Power.* When the proposed focused program of research has the goal of evaluating the impact of an intervention, applicants should clearly address the power of the evaluation design to detect a reasonably expected and minimally important effect. Many evaluations of education interventions are designed so that clusters or groups of students, rather than individual students, are randomly assigned to treatment and comparison conditions. In such cases, the power of the design depends in part on the degree to which the observations of individuals within groups are correlated with each other on the outcomes of interest. For determining the sample size, applicants need to consider the number of clusters, the number of individuals within clusters, the potential adjustment from covariates, the desired effect, the intraclass correlation (i.e., the variance between clusters

relative to the total variance between and within clusters), and the desired power of the design (note, other factors may also affect the determination of sample size, such as using one-tailed vs two-tailed tests, repeated observations, attrition of participants, etc.; see Donner & Klar, 2000; Murray, 1998; W.T. Grant Foundation, http://www.wtgrantfoundation.org/info-url_nocat3040/info-url_nocat_show.htm?doc_id=225435&attrib_id=9485). When calculating the power of the design, applicants should anticipate the degree to which the magnitude of the expected effect may vary across the primary outcomes of interest.

- (iv) *Measures.* The applicant should provide information on the reliability, validity, and appropriateness of proposed measures. Whenever possible, investigators should include relevant standardized measures of student achievement (e.g., standardized measures of mathematics achievement or reading achievement) in addition to other measures of student learning and achievement (e.g., researcher-developed measures). When proposals include collection of new data, applicants should describe procedures for data collection.

When the proposed focused program of research includes analyses of existing databases, the applicant should describe the measures to be used from the database. For example, if the applicant proposes to use a state database from which the primary outcome measure will be high school dropout rates, the applicant should detail how the high school dropout rates are derived. As another example, if the applicant proposes to aggregate a set of items from the dataset and labels the set "approaches to learning," the applicant should provide data on the validity of the aggregated set as representing this construct or a justification for using the items in this way.

Although student outcome data are ideal, the Institute recognizes that in some cases, improvement in student achievement scores will accrue slowly as a result of systemic changes (e.g., incentives for hiring high quality teachers may slowly change the quality of instruction offered at the school and through that change, improve the overall student achievement level). In such cases, researchers should propose to measure mediators or proximal outcomes (e.g., instructional practice) known to predict student achievement and provide a cogent rationale detailing the hypothesized relation among the systemic strategy, the proximal outcome(s), and student achievement.

- (v) *Fidelity of implementation of the intervention, where applicable.* When the proposed focused program of research has the goal of evaluating the impact of an intervention, researchers should specify how the implementation of the intervention will be documented and measured. Investigators should propose research designs that permit the identification and assessment of factors impacting the fidelity of implementation.
- (vi) *Comparison group, where applicable.* When the proposed focused program of research has the goal of evaluating the impact of an intervention, applicants should describe strategies they intend to use to avoid contamination between treatment and comparison groups. Comparisons of interventions against other conditions are only meaningful to the extent that one can tell what students in the comparison settings receive or experience.

Applicants should include procedures for describing practices in the comparison groups. Applicants should be able to compare intervention and comparison groups on the implementation of key features of the intervention so that, for example, if there is no observed difference in student performance between intervention and comparison students, they can determine if key elements of the intervention were also practiced and implemented in the comparison groups.

In evaluations of education interventions, students in the comparison group typically receive some kind of treatment (i.e., the comparison group is generally not a "no-treatment" control because the students are still in school experiencing the school's curriculum and instruction). For some evaluations, the primary question is whether the treatment is more effective than a particular alternative treatment. In such instances, the comparison group receives a well-defined treatment that is usually an important comparison to the target intervention for theoretical or pragmatic reasons. In other cases, the primary question is whether the treatment is more effective than what is generally available and utilized in schools. In such cases, the comparison group might receive what is sometimes called "business-as-usual." That is, the comparison group receives whatever the school or district is currently using or doing in a particular area. Business-as-usual generally refers to situations in which the standard or frequent practice across the nation is a relatively undefined education treatment. Business-as-usual may also refer to situations in which multiple branded interventions (e.g., published curricula) are being used under typical conditions of implementation. *Using a business-as-usual comparison group is acceptable when the principal question is whether the intervention being evaluated will improve outcomes relative to what is typically experienced by the study sample and the population to which generalizations will be made.* When business-as-usual consists of branded interventions, applicants should identify the interventions received in the comparison group. In all cases, applicants should account for the ways in which what happens in the comparison group is important to understanding the net impact of the experimental treatment. As noted in the preceding paragraph, applicants should be able to compare the intervention and comparison groups on key features of the intervention. The purpose is to obtain information useful for *examining* hypotheses about why the experimental treatment does or does not improve student learning relative to the counterfactual.

- (vii) *Mediating and moderating variables, where applicable.* When the proposed focused program of research has the goal of evaluating the impact of an intervention, observational, survey, or qualitative methodologies are encouraged as a complement to experimental methodologies to assist in the identification of factors that may explain the effectiveness or ineffectiveness of the intervention. Mediating and moderating variables that are measured in the intervention condition that are also likely to affect outcomes in the comparison condition should be measured in the comparison condition (e.g., student time-on-task, teacher experience/time in position).

When the proposed focused program of research has the goal of evaluating the impact of an intervention, the evaluation should be designed to account for sources of variation in outcomes across settings (i.e., to account for what might otherwise be part of the error

variance). Applicants should provide a theoretical rationale to justify the inclusion (or exclusion) of factors/variables in the design of the evaluation that have been found to affect the success of education programs (e.g., teacher experience, fidelity of implementation, characteristics of the student population). The research should demonstrate the conditions and critical variables that affect the success of a given intervention. The most scalable interventions are those that can produce the desired effects across a range of education contexts.

- (viii) *Data analysis.* All proposals must include detailed descriptions of data analysis procedures. For quantitative data, specific statistical procedures should be described. The relation between hypotheses, measures, independent and dependent variables should be clear. Because predictor variables relevant to education outcomes (e.g., student characteristics, teacher characteristics, school and district characteristics) often covary, the Institute expects investigators to utilize the most appropriate state-of-the-art analytic techniques to isolate the possible effects of variables of interest. Analytic strategies should allow investigators to examine mediators and moderators of programs and practices. The relation between hypotheses, measures, independent and dependent variables should be well specified.

For qualitative data, the specific methods used to index, summarize, and interpret data should be delineated.

Most evaluations of education interventions involve clustering of students in classes and schools and require the effects of such clustering to be accounted for in the analyses, even when individuals are randomly assigned to condition. For random assignment studies, applicants need to be aware that typically the primary unit of analysis is the unit of random assignment.

- (ix) *Program costs.* Documentation of the resources required to implement the program and a cost analysis need to be part of the study.
- (x) *Timeline.* Along with the description of the focused program of research, applicants should include a clear timeline for the activities in their focused program of research.
- (xi) *Interventions and scale of evaluation, where applicable.* If the applicant is developing new interventions, it is reasonable for the applicant to propose small preliminary studies (e.g., a short-term pre-test/post-test study with a reasonable comparison group) to obtain evidence that the intervention as it is being developed is likely to work or evidence that aspects of the intervention need modification *prior* to conducting a test of efficacy. However, by the end of the project period, applicants are expected to have completed one or more tests of the efficacy of the intervention they have developed.

If an applicant has a fully developed intervention for which there are limited data demonstrating the efficacy of the intervention, the applicant should propose to conduct one or two smaller scale efficacy studies prior to conducting an evaluation of the intervention at scale. By *efficacy*, the Institute means the degree to which an intervention

has a net positive impact on the outcomes of interest in relation to the program or practice to which it is being compared from one or more small-scale studies. Efficacy trials have less generalizability than effectiveness trials, which are evaluations of interventions implemented at scale. The limited generalizability can arise both from the lack of a full range of settings and participants in the study, as well as through the intensive involvement of the developers and researchers in the implementation of the intervention. A well-designed efficacy trial provides evidence on whether an intervention can work but not whether it would work if deployed widely.

Studies that examine the impact of interventions when they are widely deployed across the range of settings and participants that are intended targets of the intervention and that involve routine conditions of implementation are called effectiveness trials. If an applicant proposes to conduct an evaluation of the effectiveness of an intervention implemented at scale, applicants must provide *strong* evidence of the efficacy of the program as implemented on a small scale to justify the investment in a large-scale evaluation. As an example of strong evidence of efficacy, an applicant might describe the results of two or more small scale, rigorously conducted evaluations using random assignment to intervention and comparison conditions in which the efficacy of the intervention is demonstrated with different populations of students (e.g., students from middle income families in a suburban school district and students from low income families in a poor rural school district). Alternatively, a single efficacy evaluation might have involved schools from more than one district and included a diverse population of students and alone could constitute sufficient evidence of the efficacy of the intervention. Importantly, the evidence of efficacy must be based on the results of randomized field trials, or well-designed quasi-experimental evaluations.

- (xii) *Research team.* Competitive applicants will have leadership and staff that collectively demonstrate expertise in the education practice being examined, implementation and analysis of results from the research design that will be employed, working with education delivery settings, and experience that is relevant to dissemination and national leadership activities
 - (xiii) *Collaborations with schools.* When the proposed focus program of research includes conducting research activities in schools, applicants should document that they have the capacity and experience to obtain such cooperation and to describe the steps they have taken or will take to obtain it. When the plans for the first year of grant activities include work to be conducted in schools or other education delivery settings, strong applications will include documentation of the availability and cooperation of the schools or other education delivery settings that will be required to carry out that work via a letter of support from the education organization(s).
- c. *Quick response, supplementary studies.* As part of the center activities, applicants are expected to conduct smaller research projects that speak to other issues that are important within the context of the broad topic of the center. For example, a Center on Early Childhood Development and Education might conduct a focused program of research on preschool teacher quality, but might be prepared to help a state use its administrative records to compare the

children being served and the services being delivered by different types of child care providers within the state's system of universal preschool. The Institute intends to work cooperatively with center grantees to select and design supplementary studies as needed to respond to pressing policy and practice needs within the topic covered by the center. In that context, the Institute does not expect applicants to provide highly detailed research plans for these studies in the application. The applicant should, however, document capacity to conduct such studies (e.g., knowledge of the field and research experience of key personnel) and provide two examples of supplementary studies the applicant believes might be useful to undertake, including a short rationale explaining the need for the proposed study and a short description of the type of research approach that would be used. Although this section of the application does not need to be long, applicants should bear in mind that capacity for conducting quick response research projects will carry weight in the scoring of the application.

d. *Dissemination.* As part of the center activities, applicants are expected to: (a) develop new products that translate their research findings for multiple audiences, including policy makers, teachers and parents; (b) publish in peer reviewed journals; (c) publish or otherwise disseminate products such as measures and interventions developed during the course of the research; (d) host a web page and use other electronic media to provide continuously updated information about the Center's activities; and (e) engage in dissemination and outreach activities at professional conferences and other appropriate venues. Through the cooperative agreement, the Institute intends to work with center grantees to develop and plan these activities. In the application, the Institute does expect applicants to provide evidence that they are capable of engaging in all types of dissemination activities (e.g., knowledge of and connections with practitioner and policy communities) and to provide two examples of the types of activities they believe might be useful to undertake, including a short rationale justifying the need for the proposed activity and a description of their capacity for conducting such projects (e.g., experience translating research findings for multiple audiences). Although this section of the application does not need to be long, applicants should bear in mind that capacity for dissemination activities will carry weight in the scoring of the application.

e. *Leadership.* As part of the center activities, applicants are expected to provide national leadership within the center's topic area by developing position papers, hosting meetings, and engaging in dialogue with researchers and practitioners in order to identify promising areas of research, development, and dissemination for the field. The Institute intends to work cooperatively with center grantees in the development and planning of such activities. In that context, the Institute does not expect applicants to provide highly detailed plans for the leadership activities. It is sufficient to provide information on why the proposed Center staff are qualified to fulfill this leadership role if awarded a Center, as well as two examples of the types of activities the applicant believes might be useful to undertake, including a short rationale justifying the need for the proposed activity and a description of the applicant's capacity for conducting such projects. Although this section of the application does not need to be long, applicants should bear in mind that capacity for carrying out leadership and national activities will carry weight in the scoring of the application.

5. APPLICATIONS AVAILABLE

Application forms and instructions for the electronic submission of applications will be available for this program of research no later than October 7, 2005, from the following web site:

<https://ies.constellagroup.com>

6. MECHANISM OF SUPPORT

The Institute intends to award center grants in the form of cooperative agreements for periods up to 5 years pursuant to this request for applications.

7. FUNDING AVAILABLE

Typical awards will be in the range of \$1,000,000 to \$2,000,000 (total cost = direct + indirect) per year for 5 years. The size of the award depends on the scope of the activities.

The Institute expects the *focused program of research* to comprise about 50 to 75 percent of a Center's activities depending on the cost and effort required to carry out the focused program of research, with the remainder of the budget devoted to supplementary studies, dissemination activities, leadership activities, and any administrative activities not included in the focused program of research.

Although the plans of the Institute include the education research and development center program, awards pursuant to this request for applications are contingent upon the availability of funds and the receipt of a sufficient number of meritorious applications. The Institute will fund only one center under each goal. However, because the Institute is committed to funding only high quality work, the Institute will make an award for a particular center only if at least one application for that center is deemed meritorious under peer review.

8. ELIGIBLE APPLICANTS

Applicants that have the ability and capacity to conduct scientifically valid research are eligible to apply. Eligible applicants include, but are not limited to, non-profit and for-profit organizations and public and private agencies and institutions, such as colleges and universities.

9. SPECIAL REQUIREMENTS

Activities supported through this program must be relevant to U.S. schools.

Recipients of awards are expected to publish or otherwise make publicly available the results of the work supported through this program. Beginning July 1, 2005, the Institute asks IES-funded investigators to submit voluntarily to the Educational Resources Information Center (ERIC) an electronic version of the author's final manuscript, upon acceptance for publication in a peer-reviewed journal, resulting from research supported in whole or in part, from IES. The author's final manuscript is defined as the final version accepted for journal publication, and includes all modifications from the peer review process. Posting for public accessibility through ERIC is strongly encouraged as soon as possible and within twelve months of the publisher's official date of final publication. The Institute's request is aligned with the Public Access Research Policy of the National Institutes of Health. Details of the Institute's request are posted on the Institute's website at <http://www.ed.gov/ies>.

The PI and co-PIs should budget for one trip per year to meet with the program officer in Washington, DC to discuss plans, timelines, findings, and dissemination efforts.

Prior to the annual meeting, grantees will submit a report describing accomplishments and activities, and explaining any deviations from the proposed plans and timeline for the relevant year. Through the terms of the cooperative agreement, grantees will work with the Institute to plan activities related to (a) supplementary research; (b) dissemination and outreach (including development of specific products, such as manuals, booklets, and guides); and (c) leadership in the field (see description in Section 4: Requirements of the Proposed Center).

The Institute anticipates that the majority of the research will be conducted in field settings and many of the other activities will be conducted off-campus. Hence, the applicant is reminded to apply its negotiated off-campus indirect cost rate, as directed by the terms of the applicant's negotiated agreement.

Research applicants may collaborate with, or be, for-profit entities that develop, distribute, or otherwise market products or services that can be used as interventions or components of interventions in the proposed research activities. Involvement of the developer or distributor must not jeopardize the objectivity of the evaluation. Applications from or collaborations including such organizations should justify the need for Federal assistance to undertake the evaluation of programs that are marketed to consumers and consider sharing the cost of the evaluation, as well as sharing all or a substantial portion of the cost of the implementation of the product being evaluated (e.g., sharing the cost of textbooks for students).

10. LETTER OF INTENT

A letter indicating a potential applicant's intent to submit an application is optional, but encouraged, for each application. The letter of intent must be submitted electronically by the date listed at the beginning of this document, using the instructions provided at the following web site:

<https://ies.constellagroup.com/>

The letter of intent should include a descriptive title, the goal which the application will address, and brief description of the proposed focused program of research (about 3,500 characters including spaces, which is approximately one page, single-spaced); the name, institutional affiliation, address, telephone number and e-mail address of the principal investigator(s); and the name and institutional affiliation of any key collaborators. The letter of intent should indicate the duration of the proposed project and provide an estimated budget request by year, and a total budget request. Although the letter of intent is optional, is not binding, and does not enter into the review of subsequent applications, the information that it contains allows Institute staff to estimate the potential workload to plan the review.

11. SUBMITTING AN APPLICATION

Applications must be submitted **electronically by 8:00 p.m. Eastern Time** on the application receipt date, using the ED standard forms and the instructions provided at the following web site:

<https://ies.constellagroup.com>

Application forms and instructions for the electronic submission of applications will be available for this program of research no later than October 7, 2005. Potential applicants should check this site for information about the electronic submission procedures that must be followed and the software that will be required.

The application form approved for this program is OMB Number 1890-0009.

12. CONTENTS AND PAGE LIMITS OF APPLICATION

All applications and proposals for Institute funding must be self-contained within specified page limitations. Internet Web site addresses (URLs) may not be used to provide information necessary to the review because reviewers are under no obligation to view the Internet sites.

Sections described below, and summarized in Table 2, represent the body of a proposal submitted to the Institute and should be organized in the order listed below. Sections *a* (ED 424) through *j* (Appendix A) are required parts of the proposal. Section *j* (Appendix B) is optional. All sections must be submitted electronically.

Observe the page number limitations given in Table 2.

Table 2

Section	Page Limit	Additional Information
a. Application for Federal Education Assistance (ED 424)	n/a	
b. Budget Information Non-Construction Programs (ED 524) – Sections A and B	n/a	
c. Budget Information Non-Construction Programs (ED 524) – Section C	n/a	
d. Project Abstract	1	
e. Center Program Narrative	30	Figures, charts, tables, and diagrams may be included in Appendix A
f. Reference List	no limit	Complete citations, including titles and all authors
g. Curriculum Vita of Key Personnel	4 per CV	No more than 4 pages for each key person
h. Budget Justification	no limit	
i. Appendix A	15	
j. Appendix B	10	

A. Application for Federal Education Assistance (ED 424)

The form and instructions are available on the website.

B. Budget Information Non-Construction Programs (ED 524)—Sections A and B

The application should include detailed budget information for each year of support requested and a cumulative budget for the full term of requested Institute support. Applicants should provide budget information for each project year using the ED 524 form (a link to the form is provided on the application website <https://ies.constellagroup.com/>). The ED 524 form has three sections: A, B, and C. Instructions for Sections A and B are included on the form.

C. Budget Information Non-Construction Programs (ED 524)—Section C

Instructions for ED 524 Section C are as follows. Section C is a document constructed or generated by the applicant and is typically an Excel or Word table. Section C should provide a detailed itemized budget breakdown for each project year, for each budget category listed in Sections A and B. For each person listed in the personnel category, include a listing of percent effort for each project year, as well as the cost. Applicants should clearly identify the proportion of funds for supplementary research, dissemination, leadership, and management responsibilities. Section C should also include a breakdown of the fees to consultants, a listing of each piece of equipment, itemization of supplies into separate categories, and itemization of travel requests (e.g. travel for data collection, conference travel, etc.) into separate categories. Any other expenses should be itemized by category and unit cost.

D. Project Abstract

The abstract is limited to one page, single-spaced (about 3,500 characters including spaces) and should include: (1) The title of the project; (2) the RFA goal under which the applicant is applying; and brief descriptions of (3) the purpose of the focused program of research; (4) the setting in which the focused program of research will be conducted (e.g., rural high schools in Alabama); (5) the population(s) from which the participants of the study(ies) will be sampled (age groups, race/ethnicity, SES); (6) if applicable, the intervention or assessment to be developed or evaluated or validated; (7) if applicable, the control or comparison condition (e.g., what will participants in the control condition experience); (8) the primary research method (e.g., experimental, quasi-experimental, single-subject, correlational, observational, descriptive); (9) measures of key outcomes; and (10) data analytic strategy.

E. Center Program Narrative

Incorporating the requirements outlined under the section on Requirements of the Proposed Center, the *center program narrative* provides the majority of the information on which reviewers will evaluate the proposal. The center program narrative must include the following sections (a through g) in the order listed and conform to the [format requirements](#) described in section 12.E.h. below.

a. *Significance of the Center Focus (suggested: 2-3 pages)*. Describe the education problem that will be addressed by the study and specify the strategy or strategies that will be developed and evaluated to address the identified problems and that will be the focus of the center. Provide a compelling rationale justifying the need for having the center focus on this particular issue in the context of competing problems for which education practitioners and decision makers need researchers to provide solutions and describe the contribution the center will make to a solution to the identified education problem (i.e., the likelihood that the work to be undertaken by the center will have an impact at a national level on the issue or issues to be addressed).

For proposals in which an intervention is proposed (whether to be developed or to be evaluated) as a key aspect of the focused program of research, include a description of the intervention along with the conceptual rationale and empirical evidence supporting the intervention. (Applicants proposing an intervention may use Appendix B to include up to 10 pages of examples of curriculum material, computer screens, and/or test items.)

b. *Focused Program of Research (suggested: 15-18 pages)*. Provide a clear and detailed explanation of the focused program of research, including (a) clear, concise hypotheses or research questions; (b) a clear description of, and a rationale for, the sample or study participants, including justification for exclusion and inclusion criteria and, where groups or conditions are involved, strategies for assigning participants to groups; (c) clear descriptions of, and rationales for, data collection procedures and measures to be used, including reliability and validity of instruments; (d) detailed description of research design; (e) a detailed data analysis plan that justifies and explains the selected analytic strategy, shows clearly how the measures and analyses relate to the hypotheses or research questions, and indicates how the results will be interpreted; (f) a timetable for accomplishing the research; and (g) the specific outcomes of the focused program of research. Quantitative studies should, where sufficient information is available, include a power analysis to provide some assurance that the sample is of sufficient size. For further information, refer to Section 4.B.b. [Methodological requirements for the focused program of research](#).

c. *Supplementary Studies (suggested 2-3 pages)*. Provide short descriptions of two examples of supplementary studies, including a short rationale explaining the need for each proposed study and a short description of the type of research approach that would be used.

d. *Dissemination Activities (suggested 2-3 pages)*. Provide short descriptions of two examples of dissemination activities, including a short rationale justifying the need for each proposed activity and a short description of the applicant's capacity for conducting such projects (e.g., experience developing materials for practitioners, designing websites).

e. *Leadership Activities (suggested 2-3 pages)*. Provide short descriptions of two examples of leadership activities, including a short rationale justifying the need for each proposed activity and a short description of the applicant's capacity for conducting such projects (e.g., experience organizing small conferences).

f. *Management and Institutional Commitment (suggested 2-3 pages)*. Describe plans and procedures for the overall management of the center. These plans should include details of procedures for coordinating with schools and districts or other education delivery settings involved in the projects of the center. Provide a description of the resources available to support the center at the applicant's institution and in the field settings in which the research will be conducted.

g. *Personnel (suggested 2-3 pages)*. Include brief descriptions of the qualifications of key personnel, including their proposed role in the center and the time allotted to center responsibilities. Information on personnel should also be provided in their curriculum vitae. Applicants should describe duties of personnel with respect to the proposed center's research,

dissemination, and leadership activities and to the management of the center.

h. *Format requirements.* The center program narrative is limited to the equivalent of 30 pages, where a “page” is 8.5 in. x 11 in., on one side only, with 1 inch margins at the top, bottom, and both sides. Single space all text in the research narrative. To ensure that the text is easy for reviewers to read and that all applicants have the same amount of available space in which to describe their projects, applicants must adhere to the type size and format specifications for the entire research narrative including footnotes. See frequently asked questions available at <https://ies.constellagroup.com> on or before June 6, 2005.

Conform to the following four requirements:

- (i) The height of the letters must not be smaller than 12 point;
- (ii) Type density, including characters and spaces, must be no more than 15 characters per inch (cpi). For proportional spacing, the average for any representative section of text must not exceed 15 cpi;
- (iii) No more than 6 lines of type within a vertical inch; and
- (iv) Margins, in all directions, must be at least 1 inch.

Applicants should check the type size using a standard device for measuring type size, rather than relying on the font selected for a particular word processing/printer combination. Figures, charts, tables, and figure legends may be smaller in size but must be readily legible. The type size and format used must conform to all four requirements. Small type size makes it difficult for reviewers to read the application; consequently, the use of small type will be grounds for the Institute to return the application without peer review. Adherence to type size and line spacing requirements is also necessary so that no applicant will have an unfair advantage, by using small type, or providing more text in their applications. **Note, these requirements apply to the PDF file as submitted.** As a practical matter, applicants who use a 12 point Times New Roman without compressing, kerning, condensing or other alterations typically meet these requirements.

Use only black and white in graphs, diagrams, tables, and charts. The application must contain only material that reproduces well when photocopied in black and white.

The 30-page limit does *not* include the ED 424 form, the one-page abstract, the ED 524 form and narrative budget justification, the curriculum vitae, or reference list. Reviewers are able to conduct the highest quality review when applications are concise and easy to read, with pages numbered consecutively.

F. Reference List

Please include complete citations, including titles and all authors, for literature cited in the research narrative.

G. Brief Curriculum Vita of Key Personnel

Abbreviated curriculum vita should be provided for the principal investigator(s) and other key personnel. *Each vitae is limited to 4 pages and should include information sufficient to demonstrate that personnel possess training and expertise commensurate with their duties (e.g., publications, grants, relevant research experience) and have adequate time devoted to the project to carry out their duties (e.g., list current and pending grants with the proportion of the individual's time allocated to each project).* The curriculum vita must adhere to the margin, format, and font size requirements described in the research narrative section.

H. Budget Justification

The *budget justification* should provide sufficient detail to allow reviewers to judge whether reasonable costs have been attributed to the project. It should include the time commitments and brief descriptions of the responsibilities of key personnel. *The budget justification should correspond to the itemized breakdown of project costs that is provided in Section C and should clearly identify the proportion of funds for supplementary research, dissemination, and leadership activities and the proportion allocated to management responsibilities.* For consultants, the narrative should include the number of days of anticipated consultation, the expected rate of compensation, travel, per diem, and other related costs. A justification for equipment purchase, supplies, travel and other related project costs should also be provided in the budget narrative for each project year outlined in Section C. For applications that include subawards for work conducted at collaborating institutions, applicants should submit an itemized budget spreadsheet for each subaward for each project year, and the details of the subaward costs should be included in the budget narrative. Applicants should use their institution's federal indirect cost rate and use the off-campus indirect cost rate where appropriate (see instructions under Section 9 Special Requirements). If less than 75 percent of total indirect costs are based on application of the off-campus rate, the applicant should provide a detailed justification.

I. Appendix A

The purpose of *Appendix A* is to allow the applicant to include any figures, charts, or tables that supplement the research text, examples of measures to be used in the project, and letters of agreement from partners (e.g., schools) and consultants. In addition, in the case of a resubmission, the applicant may use up to 3 pages of the appendix to describe the ways in which the revised proposal is responsive to prior reviewer feedback. These are the only materials that may be included in Appendix A; all other materials will be removed prior to review of the application. Narrative text related to any aspect of the project (e.g., descriptions of the proposed sample, the design of the study, or previous research conducted by the applicant) should be included in the 30-page center program narrative. Letters of agreement should include enough information to make it clear that the author of the letter understands the nature of the commitment of time, space, and resources to the research project that will be required if the application is funded. The appendix is limited to 15 pages.

J. Appendix B (optional)

The purpose of Appendix B is to allow applicants who are proposing an intervention or assessment to include examples of curriculum material, computer screens, test items, or other materials used in the intervention or assessment. These are the only materials that may be

included in Appendix B; all other materials will be removed prior to review of the application. Appendix B is limited to 10 pages. Narrative text related to the intervention (e.g., descriptions of research that supports the use of the intervention/assessment, the theoretical rationale for the intervention/assessment, or details regarding the implementation or use of the intervention/assessment) should be included in the 30-page center program narrative.

K. Additional Forms

Please note that applicants selected for funding will be required to submit the following certifications and assurances before a grant is issued:

- (1) SF 424B-Assurances-Non-Construction Programs
- (2) ED-80-0013-Certification Regarding Lobbying, Debarment, Suspension and other Responsibility Matters; and Drug-Free Workplace Requirements
- (3) ED 80-0014 (if applicable)-Lower Tier Certification
- (4) SF-LLL (if applicable) - Disclosure of Lobbying Activities
- (5) Protection of Human Research Subjects assurance and/or Institutional Review Board certification, as appropriate

13. APPLICATION PROCESSING

Applications must be received by **8:00 p.m. Eastern time** on the application receipt date listed in the heading of this request for applications. Upon receipt, each application will be reviewed for completeness and for responsiveness to this request for applications. Applications that do not address specific requirements of this request will be returned to the applicants without further consideration.

14. PEER REVIEW PROCESS

Applications that are complete and responsive to this request will be evaluated for scientific and technical merit. Reviews will be conducted in accordance with the review criteria stated below by a panel of scientists who have substantive and methodological expertise appropriate to the program of research and request for applications.

Each application will be assigned to at least two primary reviewers who will complete written evaluations of the application, identifying strengths and weaknesses related to each of the review criteria. Primary reviewers will independently assign a score for each criterion, as well as an overall score, for each application they review. Based on the overall scores assigned by primary reviewers, an average overall score for each application will be calculated and a preliminary rank order of applications prepared before the full peer review panel convenes to complete the review of applications.

The full panel will consider and score only those applications deemed to be the most competitive and to have the highest merit, as reflected by the preliminary rank order. A panel member may nominate for consideration by the full panel any proposal that he or she believes merits full panel review but would not have been included in the full panel meeting based on its preliminary rank order.

15. REVIEW CRITERIA FOR SCIENTIFIC MERIT

The goal of the centers is to contribute to the solution of education problems and to produce and disseminate reliable information about the education practices that support learning and improve academic achievement and access to education for all students. Reviewers will be expected to assess the following aspects of an application in order to judge the likelihood that the proposed center will have a substantial impact on the pursuit of that goal. Information pertinent to each of these criteria is also described above in the section on Requirements of the Proposed Center and in the description of the center program narrative, which appears in the section on Contents and Page Limits of Application.

Significance	Does the applicant present a strong rationale for the center? Does the applicant provide a strong justification for the focus of the center? Does the applicant make a compelling case for the potential contribution of the center to the solution of an education problem?
Plans for Focused Program of Research	Does the applicant present (a) clear hypotheses or research questions; (b) clear descriptions of and strong rationales for the sample, the measures (including information on the reliability and validity of measures), data collection procedures, and research design; and (c) a detailed and well-justified data analysis plan? Does the research plan meet the requirements described in Section 4 on the Requirements of the Proposed Center and in the description of the center program narrative in the section on Contents and Page Limits? Is the plan for the focused program of research appropriate for answering the research questions or testing the proposed hypotheses?
Other Activities	Does the content of the examples of proposed supplementary studies, dissemination activities, and leadership activities and the description of the applicant's capacity to conduct such projects suggest that the applicant has the ideas, experience, and capability to successfully carry-out such projects in cooperation with the Institute?
Personnel	Does the description of the personnel make it apparent that the principal investigator, project director, and other key personnel possess the training and experience and will commit sufficient time to competently conduct the proposed research, carry out other center responsibilities (e.g., dissemination and leadership activities), and manage the proposed center?
Resources	Does the applicant have the facilities, equipment, supplies, and other resources required to support the proposed activities? Do the commitments of each partner show support for the implementation and success of the proposed center activities?

16. RECEIPT AND REVIEW SCHEDULE

Letter of Intent Receipt Date:	September 19, 2005
Application Receipt Date:	November 10, 2005, 8:00 p.m. Eastern time

Earliest Anticipated Start Date: June 1, 2006

17. AWARD DECISIONS

The following will be considered in making award decisions:

Scientific merit as determined by peer review
Responsiveness to the requirements of this request
Performance and use of funds under a previous Federal award
Contribution to the overall program of research described in this request
Availability of funds

18. INQUIRIES MAY BE SENT TO:

For Goal One: National Research and Development Center on Early Childhood Development and Education

Dr. James Griffin
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: James.Griffin@ed.gov
Telephone: (202) 219-2280

For Goal Two: National Research and Development Center on Education Policy

Dr. Ram Singh
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: Ram.Singh@ed.gov
Telephone: (202) 219-2025

For Goal Three: National Research and Development Center on Postsecondary Education and Training

Dr. Mark Schneider
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: mark.schneider@ed.gov
Telephone: (202) 208-7281

For Goal Four : Jacob K. Javits National Research and Development Center for Gifted and Talented Education

Dr. Anne Sweet
Institute of Education Sciences
555 New Jersey Avenue, NW

Washington, DC 20208

Email : anne.sweet@ed.gov

Telephone : (202) 219-2043

19. PROGRAM AUTHORITY

20 U.S.C. 9501 *et seq.*, the “Education Sciences Reform Act of 2002,” Title I of Public Law 107-279, November 5, 2002; 20 U.S.C. 7253 *et seq.*, the “Jacob K. Javits Gifted and Talented Students Education Act of 2001,” Title V, Part D, Subpart 6 of the “Elementary and Secondary Education Act of 1965.” This program is not subject to the intergovernmental review requirements of Executive Order 12372.

20. APPLICABLE REGULATIONS

The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 74, 77, 80, 81, 82, 84, 85, 86 (part 86 applies only to institutions of higher education), 97, 98, and 99. In addition 34 CFR part 75 is applicable, except for the provisions in 34 CFR 75.100, 75.101(b), 75.102, 75.103, 75.105, 75.109(a), 75.200, 75.201, 75.209, 75.210, 75.211, 75.217, 75.219, 75.220, 75.221, 75.222, and 75.230.

21. REFERENCES

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- Karoly, L., & Bigelow, J.H. (2005). *The economics of investing in universal preschool education in California*. Santa Monica, California: RAND.
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Zill, N., Resnick, G., Kim, K., O'Donnell, K., Sorongon, A., and others. (2003). *Head Start FACES 2000: A whole-child perspective on program performance*. Administration for Children and Families, U.S. Department of Health and Human Services.